United Nations A/72/367

General Assembly

Distr.: General
28 August 2017

Original: English

Seventy-second session
Item 137 of the provisional agenda*
Proposed programme budget for the biennium 2018-2019

Proposal for the renovation of the North Building at the Economic Commission for Latin America and the Caribbean in Santiago

Report of the Secretary-General**

Summary

The present report sets out the proposal of the Secretary-General to start the implementation of the project for the renovation of the North Building at the headquarters of the Economic Commission for Latin America and the Caribbean in Santiago, which was one of the near-term major construction projects identified in the report of the Secretary-General on the strategic capital review (A/70/697) and the preceding report (A/69/760).

The report provides a summary of the outcomes of the feasibility study undertaken in the 2016-2017 biennium, which included two possible options for implementing the project, intended to meet the global objectives for capital improvements as established under the strategic capital review.

Of the two options studied, the Secretary-General recommends option 1, which entails the renovation of the North Building in one phase, utilizing on-site swing space. The total cost of the project, to be undertaken from 2018 to 2023 (a project duration of six years), is estimated at $14,118,000 at current rates, inclusive of escalation and contingency. In addition to being the most cost-effective option in terms of one-time capital costs, option 1 would enable the Organization to avoid additional long-term operational and maintenance costs that would arise if the renovation project were not undertaken. Option 1 has the added benefit of carrying the lowest risk and providing additional long-term efficiencies in energy and space utilization.

It is recommended that the General Assembly approve the proposed scope, cost and implementation strategy for the implementation of the project; approve the establishment of three positions related to the dedicated project management team

* A/72/150.

** The present report was submitted late owing to the need for extensive internal consultations on a new and complex construction project.

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and project support staff; appropriate an amount of $192,000 for the project in 2018 under the proposed programme budget for the biennium 2018-2019; and approve the establishment of a multi-year construction-in-progress account for this project.

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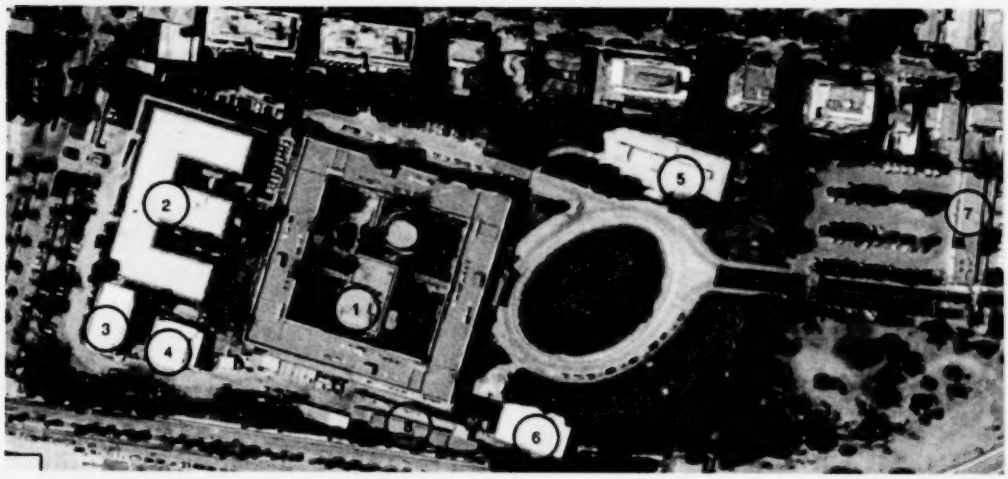
I. Background

1. The headquarters of the Economic Commission for Latin America and the Caribbean (ECLAC) was established in Santiago in 1965. ECLAC is one of the five regional commissions of the United Nations, founded with the purpose of contributing to the economic development of Latin America and the Caribbean, coordinating actions directed towards that end, and reinforcing economic ties among countries and with other nations of the world. The promotion of the region's social development was later included among its primary objectives. Its main building, conceived and built in the 1960s, is considered an emblematic landmark of modern architecture and included in the watch list of Docomomo International (International Committee for Documentation and Conservation of Buildings, Sites and Neighbourhoods of the Modern Movement), as part of the heritage of that architectural movement in view of its innovative design concepts and novel structural model.

2. The ECLAC compound is located along the Mapocho River on 5.5 ha donated to the United Nations by the Government of Chile in 1960. Construction in the compound totals 20,108 m^2, of which 13,556 m^2 comprises office space and 6,552 m^2 consists of common and shared support areas. The ECLAC premises in Santiago currently consist of eight buildings, as shown in figure I.

Figure I
Aerial view of the ECLAC compound



1, Main Building; 2, North Building; 3, Printing Building; 4, Cafeteria; 5, CLADES Building; 6, Auditorium Building; 7, Security Building; 8, Ancillary Building.

3. The ECLAC main building in itself reinforces the structural and formal beliefs of modern architecture by blending its structure, volumes and concrete texture with the surrounding Andes Mountains, using the ground floor as open space for public gatherings, and promoting open and fluid functional office spaces. Over the years, most of the ECLAC buildings have undergone significant capital improvements; the North Building, which was built in 1989, has however received only minor corrective maintenance and repairs in the past 28 years. Interior finishes such as the flooring, office furniture and partitions have been updated, but the old metallic ceilings are non-compliant with the most recent seismic codes. Energy consumption is unusually high because of a poor building envelope and roof insulation, and an underperforming heating, ventilating and air-conditioning (HVAC) system. In

addition, a substantial number of building components such as HVAC have exceeded their normal useful life. Since the building constitutes a temporary construction, maintenance is expensive and partial renovations undertaken at different stages would be extremely costly. The net book value of the building, that is, after depreciation, represents less than 15 per cent of the gross replacement cost of the building, which indicates underinvestment in capital improvements. The recommended, most cost-effective and beneficial action is to execute a complete renovation of the building.

II. Seismic risk at the Commission in Santiago

4. The entire length of Chile lies along a major subduction zone constituting the south-western rim of the Pacific Ring of Fire. In this region, the Nazca Plate is being subducted beneath the South American Plate, resulting in the uplift and volcanism of the Andes Mountains and frequent, large-magnitude earthquakes. The two plates are converging at approximately 7 m per century. The United States Geological Survey lists approximately 25 major earthquakes that have occurred within the country's borders since 1730. More than 20 of those events are estimated to have exceeded magnitude 7.0 on the Richter scale.

5. Prior to the Maule earthquake of 2010, notable historic events in the vicinity included the magnitude 7.5 earthquake in the Valparaiso region on 8 July 1971, and the magnitude 7.8 earthquake offshore of Valparaiso on 3 March 1985, which affected areas including Santiago. A magnitude 9.5 earthquake occurred in the Valdivia region on 22 May 1960. It affected areas including Concepción, and is regarded as the largest earthquake known to have occurred in the twentieth century. Together, these earthquakes produced strong ground shaking and widespread damage in areas that were also affected by the Maule earthquake, and resulted in a total of nearly 2,000 fatalities.[1]

6. In 2010, after the earthquake in Chile, the ECLAC team of engineers conducted an assessment of the resistance of the ECLAC buildings to potential strong seismic loads. The assessment evaluation report revealed a need to undertake seismic mitigation measures for the North Building, among others, in order to make it compliant with the current minimum standards for seismic resistance that are considered necessary for the safety of its users. The results for the North Building confirmed that the old metallic ceilings are non-compliant with the latest seismic codes.

III. Assessment of the existing conditions of the North Building

7. At present, many of the main components of the building have little or no remaining useful life, and therefore require urgent attention. These conditions, originally reported in the strategic capital review report, have become more worrying since then. Compliance with building codes and standards is low and concerns over safety and security have been raised. Problems have arisen and worsened although investment has since been made. Major issues are discussed below.

[1] Data from United States Geological Survey website, "Historic earthquakes".

A. Safety and security

8. The most relevant issues concerning life safety in this building relate to seismic code compliance, fire protection and egress. As a result of the latest seismic events, the Chilean seismic code was updated and new regulations for interior ceiling and fixtures were included. The North Building is not compliant with these new codes. Ceilings are made of heavyweight metal and need to be replaced by lightweight ceiling panels. While ECLAC has been replacing ceilings in all the compound buildings since 2010, the North Building is the last building awaiting such replacement. Another safety concern is related to fire protection, stemming mainly from two major issues and some minor related problems. The first major issue is that the metallic structure of the building lacks fireproofing coating and the second is the lack of a fire suppression system. Even though a new exterior network of above-ground and underground piping with double-headed hydrants, fire hoses, hose cabinets and branch pipes was installed in 2016, the building has neither an interior fire suppression system nor a sprinkler system. The building does have a fire detection system with smoke detectors and breaking switches connected to the main alarm panel in the Central Security Office. Fire extinguishers are situated at several locations in the building and there is also a public announcement audio system for emergency messages.

9. Other minor but not less serious safety problems are a result of the aged electrical system. The electrical wiring is too old and caused some fire-related incidents in 2016, and thus a complete rewiring, and ducting and/or replacement of the cable trays, is required. Finally, there are some minor issues related to the means of egress. The building has three main entrances with double doors and two secondary entrances with simple doors. Navigation is quite complex because of the intricate layout and the lack of proper signage. The floor plan is also complex and corridors are duplicated, making it difficult to understand the layout or to have a clear path recognition.

B. Energy efficiency and indoor environmental quality

10. Owing to its poor performance envelope and to the multiple non-integrated and aged HVAC systems, the building has a poor energy performance, and the building's indoor environmental quality is quite low as a result of an obtrusive partition system and a lack of adequate lighting.

11. The lack of passive strategies, such as proper insulation, adequate glazing, solar control and natural ventilation, has also important impacts on the significant HVAC energy consumption. Different active strategies, such as replacement of HVAC components and lighting, have been implemented since the inception of the building, which have improved the indoor environmental quality but have increased energy consumption. Considering that the actual HVAC plant is using an ozone-depleting gas that is no longer legal, and has reached the end of its useful life, it is strongly recommended that it be replaced with a new, energy-efficient HVAC plant.

12. It should be noted that, with respect to energy efficiency and environmental performance, the General Assembly in its resolutions 70/205 and 71/228 requested the Secretary-General to submit an action plan for integrating sustainable development practices into its operations and facilities management, with the specific goal of a United Nations that does not, through its operations or facilities management, have a negative impact on the climate.

13. As verified during several inspection visits and preventive technical monitoring, the North Building has poor indoor environmental quality. This is

primarily due to the internal partition configuration and poor quality of interior finishes, which make the internal space dark and visually disconnected from the exterior, precluding natural light and views for staff; in addition, the acoustic quality is poor because of inadequate sound insulation. This situation may be corrected by remedial strategies such as a reconfiguration of the spatial layout, the replacement of the internal partitions, and the installation of skylights. The overall configuration of the building (the structure and layout) is such that the potential for a high-quality environment after remedial measures is high.

14. Finally, with respect to accessibility for persons with disabilities, the North Building currently does not comply with the prevailing local codes. The building is accessible by two roads, one on each side. Both building entrances have non-compliant ramps; accessible doors in both accesses are not automatic and the clear space before entering is insufficient. The building has two accessible restrooms which are not fully compliant: there are two compliant water closets in each restroom but inadequate turning space and non-compliant sinks.

C. Replacement of life-cycle components

15. As indicated in paragraph 3, the North Building was built in 1989, as a temporary structure which is now almost 30 years old and most of its components are beyond the end of their useful lives. As reported in the strategic capital review, with the exception of its structure, the average remaining useful life of the building components is less than eight years. Up to 70 per cent of the building components (which comprise the following major groups: exterior closure, roofing, interior construction, stairs, interior finishes, conveying systems, HVAC, fire protection, and electrical system) have reached the end of their standard useful lives.

D. Efficiency in office space utilization

16. Office space utilization at ECLAC is regulated by the Commission's space guidelines, which are applied in all buildings with minimal adjustments according to building shape, structural grid or spatial layout. The North Building is considered an office building with mixed use since it houses a variety of substantive divisions and also some support divisions and other sections. Meeting rooms and classrooms are also part of the functional mix. Spatial configuration is characterized by an open plan layout allowing multiple configurations. However, the existing layout favours closed offices with opaque partitions at the perimeter leaving an open space and meeting rooms at the centre with no natural light and a quite low indoor environmental quality. In addition, there are currently 60 ECLAC staff members who are located on underground floors with sub-standard office conditions and no natural lighting. Consequently, ECLAC is in the process of assessing space utilization in order to optimize the existing space and increase the assignable area[2] in the North Building.

E. Swing space requirements and availability

17. One of the issues at the ECLAC compound in Santiago in relation to this project is the limited area of swing space available within the compound. Taking into account that the North Building accommodates around 166 staff, availability of

[2] Assignable area is the portion of the plannable area on a floor that can be assigned to occupant groups or functions.

swing space is a key factor in deciding the approach to the project and its implementation. The availability of on-site swing space is to be increased by the renovation of the Printing Building in 2017, which will be able to accommodate around 50 additional staff after renovation. At the compound level, there is swing space availability for another 50 staff, making it possible to provide swing space for 100 staff. This would limit the number of stages needed to execute the renovation of the North Building. Off-site swing space availability is ubiquitous but expensive since the ECLAC compound is located in what was a residential suburban area at the time of its inauguration in 1965; nowadays this area has become an office and commercial zone.

IV. Project overview

A. Project purpose

18. The purpose of the North Building renovation project is to provide the Organization with a first-class workspace with good indoor environmental quality and efficiency in the use of energy, and which will provide all staff with a safe work environment according to codes and industry standards. The project is to be implemented through the decommissioning and renovation of an expired building with little or no remaining useful life, excessive use of energy, and a low level of compliance with codes and standards.

B. Objectives

19. The key project objectives, established at the inception of the project plan, are in line with the key objectives outlined in the report of the Secretary-General on the strategic capital review (A/68/733). The project objectives are:

(a) To maintain the property value of United Nations premises, especially related to building life-cycle replacement;

(b) To meet industry standards related to health and safety issues, including fire and life safety planning and systems design, fire suppression, fire alarm and fire exit planning;

(c) To meet building codes relative to preparedness and design against potential natural disasters and emergency situations, such as earthquakes, floods and the like;

(d) To ensure compliance with all relevant regulations relating to persons with disabilities, including provisions concerning accessibility and technology;

(e) To ensure that hazardous materials are removed from the facilities;

(f) To improve space use efficiency by maximizing the use of available office and meeting space and optimizing building support spaces; this is to be achieved through optimization of the use of the available work and meeting spaces, and providing adaptable and efficient space arrangement;

(g) To modernize outdated major building systems, including mechanical, electrical, low-voltage electrical, plumbing and conveying and vertical transportation, in order to meet industry norms and extend the useful life of building components;

(h) To move towards a more energy efficient building, specifically by reducing energy consumption, fresh water consumption, the use of non-renewable

material resources and waste generation, and improving indoor air and lighting quality;

(i) To keep disruption of the work of the United Nations to a minimum and to ensure business and operational continuity throughout project implementation.

C. Project benefits

20. *Quantifiable benefits*. Considering that the North Building's useful life is almost at an end, a major replacement of building components with a significant extension of useful life would provide the Organization with an additional 40 years of building use, which would be a major quantifiable benefit. Other major quantifiable benefits, to be gained by replacing major electro-mechanical components, are the associated savings stemming from reductions in energy consumption and greenhouse gas emissions. In addition, major improvements in safety and security aspects are expected to significantly reduce risk exposure and the Organization's liability. Finally, efficiency in office space utilization could potentially lead to an increase in rentable area, resulting in additional rental income for the Organization.

21. *Qualitative benefits*. Qualitative benefits cannot be measured in monetary terms but do have a very significant organizational impact. They include non-energy-related sustainability aspects, such as indoor air quality, the use of low-maintenance materials, which reduces the amount of cleaning products and water used, and the use of local materials to promote regional technologies and construction techniques. Other benefits include supporting broader United Nations business transformation initiatives by empowering a more mobile and informed workforce, and a well-designed variety of work spaces suitable for the use of modern information and communications technologies, appropriate lighting, and sufficient acoustical insulation. Overall accessibility and means of egress will be improved substantially.

D. Project strategies

22. In 2014, ECLAC conducted, as an integral part of the strategic capital review (see A/70/697, paras. 54 and 55), an assessment of the conditions of the buildings in ECLAC. The purpose of the assessment was to establish the condition of the buildings and infrastructure components and identify remedial works needed to upgrade the facilities in line with United Nations standards and industry codes. The results showed an urgent necessity for a series of major maintenance works and minor alterations that could be implemented by one of two strategies:

(a) Programmed multiple interventions that will be part of the regular maintenance operations of ECLAC with minor disruptions in the Commission's operations and minimal use of swing space;

(b) Executing a capital project such as a comprehensive renovation of the whole building with extensive use of swing space.

1. Programmed multiple intervention strategy

23. A multiple intervention strategy would entail multiple discrete renovations with minor interruptions in ECLAC operations and minimal use of swing space, executed in three phases, three years for each phase. The main objective in this strategy would be to postpone a major intervention in the building without compromising the safety and security of staff and visitors and extend the remaining

useful life of the affected building components, securing 10 more years of useful life.

24. The first phase (2018-2020) would consist of executing the most critical works in the building without significantly addressing its energy consumption problems. Major works would include, but would not be limited to, the installation of a fire suppression system, the repair of major HVAC system components, building a wastewater treatment plant, rewiring the electrical system and refurbishing the electrical boards, the installation of a new lighting system, the replacement of the ceiling system according to seismic codes, and a partial improvement of the accessibility conditions. As a result, the building would have at least acceptable operating conditions for eight more years. During the second phase (2021-2023), the execution of the postponed most critical works in the building would be considered, addressing its energy consumption problems in a comprehensive way. Works would include the replacement of major HVAC system components, the replacement of the electrical system including new electrical panels, the implementation of complete accessibility conditions, and the installation of a new natural lighting system. Finally, a third phase (2024-2026) would consist of a group of critical works mainly addressing some energy consumption issues, replacing building components which had reached the end of their useful lives, executing major repairs, and carrying out maintenance on previous works. After these works, energy consumption would be reduced but not in a significant manner and the useful life of the affected building components extended for two more years (2027 and 2028).

25. The total construction cost of these improvements is estimated at $16.254 million over a 20-year period, encompassing nine years of interventions that would leave the building in acceptable operating conditions for a period of 10 years, but would defer the required major renovation works. This would therefore have a limited effect on reducing energy consumption, and would result in higher initial costs due to multiple consulting, management, and procurement processes for 10 to 12 small projects over a nine-year period. At the end of the 10 additional years of useful life of the building, approximately in 2029, three options could be considered: a complete building renovation, a new period of multiple renovations but in a building already at the end of its useful life, or renting office space outside the compound. For the total cost of ownership calculation in table 1, the last option, rental of office space, is assumed (since at that time, the building's useful life would have expired, and the most cost-effective and logical decision would be to make no further investment in the building and to rent off-campus office space). Table 1 summarizes the costs involved in the multiple intervention strategy for each of the three considered phases that involve construction cost, the last column summarizing the costs associated with the office rental option. The construction cost in the "Remaining useful life" column is associated with investments required to move staff out of the old building and to set up the new external office rental environment and facilities according to United Nations standards. All construction costs in table 1 include escalation and project management costs.

Table 1
Total cost of ownership of the multiple intervention strategy

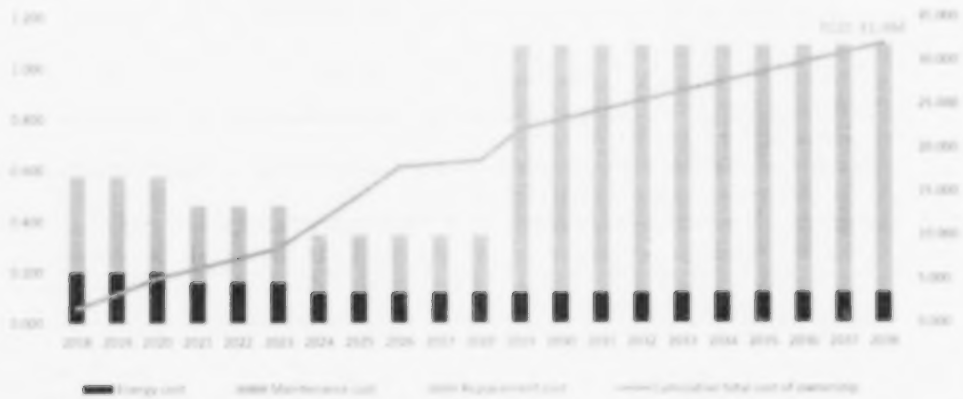
(Millions of United States dollars)

	Phase 1	*Phase 2*	*Phase 3*	*Remaining useful life*
	2018-2020	*2021-2023*	*2024-2026*	*2027-2038*
Total construction cost	3.426	2.059	8.274	2.495
Energy cost	0.600	0.480	0.360	1.440

	Phase 1	*Phase 2*	*Phase 3*	*Remaining useful life*
	2018-2020	*2021-2023*	*2024-2026*	*2027-2038*
Maintenance cost	1.130	0.904	0.678	2.712
Replacement cost	–	–	–	7.426
Cumulative total cost of ownership	**5.156**	**8.599**	**17.910**	**31.983**

26. The cost of renting off-campus office space (replacement cost of $7.426 million) amounts to about 23 per cent of the total cost of ownership for this strategy, a significant proportion. Figure II shows the impact of this replacement cost on the total cost of ownership after 2029, at which point the useful life of the building would have expired; as a result of renting off-campus office space the total cost of ownership would reach $31.983 million in 2038.

Figure II
Long-term cost analysis of the multiple intervention strategy
(Millions of United States dollars)



2. Complete building renovation strategy

27. The complete building renovation strategy consists of a one-time capital investment for a complete sustainable building renovation targeting a "net zero" building classification in which the total amount of energy used by the building on an annual basis would be equal to or less than the amount of renewable energy created on the site. (It is possible that the renovated building could produce excess energy for use in other buildings.) Major works would include but would not be limited to the replacement of the façade, the roof and HVAC, and the retrofitting of the interior. The major intent in this case would be to execute a major intervention or building renovation guaranteeing the safety and security of staff, significantly reducing not only the environmental impact but also the operating costs and extending the remaining useful life of the affected building components accordingly. It is proposed to dismantle the building, keeping its main structure to renovate it up to international codes and industry standards by replacing the entire roofing and façade system with a highly efficient thermal and acoustic envelope. The total construction cost of this project is estimated at $14.118 million, involving two years of intervention that would leave the building in optimum operating conditions for an

additional period of 25 years. The proposed project would also provide opportunities for the most cost-effective method to provide short-term benefits for the Organization in relation to building performance, energy conservation, use of space and the life-cycle replacement of building systems that have reached the end of their useful lives.

28. Table 2 shows the cost breakdown of this strategy, showing the capital investment required for the comprehensive renovation of the building, and the remaining useful life, which would require only an overall lower maintenance cost of $2.825 million for a period of 14 years, as compared to the multiple intervention strategy with the renting of external office space. This maintenance cost represents an impact of only 15.5 per cent of total cost of ownership over 20 years of $18.185 million, which is significantly lower than the impact of the multiple intervention strategy shown earlier of $31.983 million.

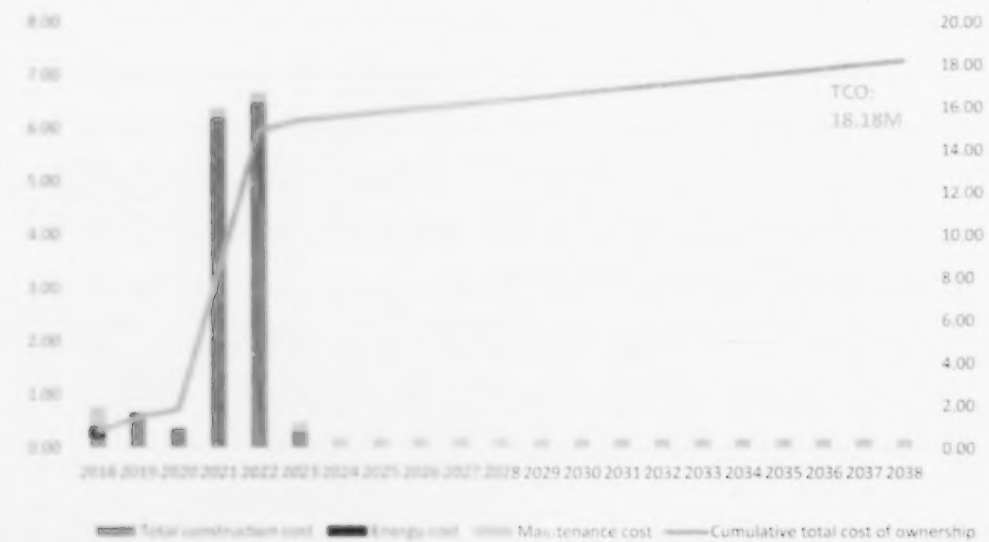
Table 2
Total cost of ownership of the complete building renovation strategy

(Millions of United States dollars)

	Phase 1	*Phase 2*	*Remaining useful life*
	2018-2020	*2021-2023*	*2024-2038*
Total construction cost	1.133	12.984	–
Energy cost	0.300	–	–
Maintenance cost	0.377	0.565	2.825
Cumulative total cost of ownership	**1.810**	**15.359**	**18.185**

Figure III
Long-term cost analysis of complete building renovation strategy

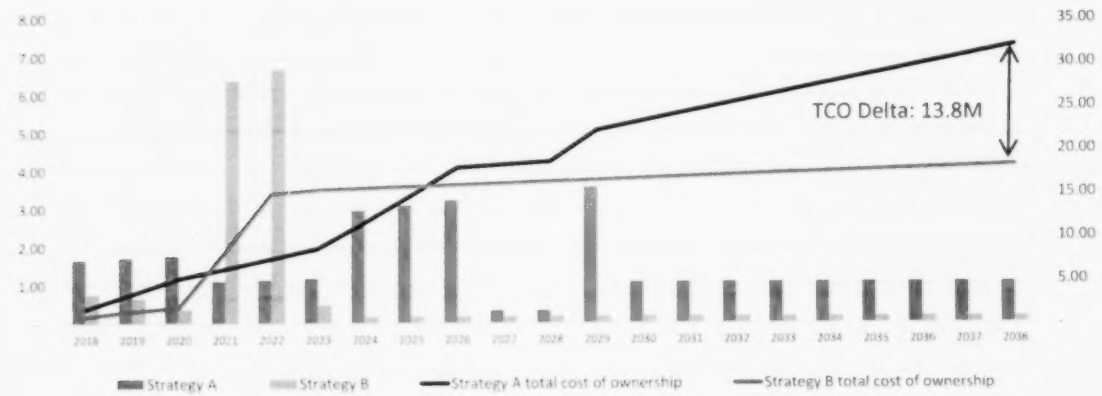
(Millions of United States dollars)



Comparison of strategies

29. Considering the direct and indirect costs of each strategy, the total cost of ownership including construction cost, energy consumption, maintenance cost, swing space requirements and the cost after extension of the useful life, the programmed multiple intervention strategy comes out as the more expensive option for the Organization, with a total cost of $31.983 million over a 20-year period. Executing a capital project as a comprehensive renovation of the whole building would be a more cost-effective approach, with a total value of $18.185 million for the same 20-year period, for a difference of $13.798 million. The comparison is shown in figure IV.

Figure IV
Comparison of the two strategies
(Millions of United States dollars)



V. Analysis of options

30. Under the complete building renovation strategy, there would be two viable options relating to the provision of swing space to accommodate staff during construction.

31. Of the total 166 staff in the North Building, 100 staff could be accommodated in internal swing space already available in various buildings. For the remaining 66 staff, there are two options to consider for creating the required extra swing space:

Option 1. On-site temporary building

32. This option would require setting up a temporary building in the south parking lot of the ECLAC campus, in the same location where a temporary building was set up in 2010. The construction would consist of container-like prefabricated 15 m^2 modules that are quickly built into a single connected and consolidated temporary building. Bathrooms would be provided in the existing facilities in the South Pavilion and the CLADES Building, which would be adjacent to the temporary building.

33. It should be noted that ECLAC has already used this option in the past with satisfactory results during the renovations and reconstruction works of buildings that were affected by the 2010 earthquake.

34. The key advantages of option 1 are the following:

(a) **Minimal security risk.** Since the building would be on campus, all safety and security staff and procedures would remain the same for the same population. Some minor safety and security operational considerations might be needed for evacuation or emergency procedures.

(b) **No dependence on external maintenance and support.** All technical aspects of the temporary building such as electrical systems, cleaning, voice/data communications and information technology infrastructure would be handled in their entirety by the corresponding ECLAC units. This implies that there would be no additional costs to consider for support, and the same levels of service that users currently have would be maintained.

(c) **Use of existing facilities.** There would be many options for connecting power and communications to the temporary building, the same office IP telephone system would be utilized with no impact on usability or retraining/relearning of new equipment systems. No additional Internet Service provider agreements or telephony contracts would be required.

(d) **Lower project risk.** ECLAC implemented a similar project in 2010, when it was required to design and build an on-campus modular temporary office building for swing space; there are many lessons learned from that previous project and known implementation details that would contribute to a more efficient and successful implementation for the new project.

(e) **Reutilization of building materials.** Some structures used for the previous project would be reutilized, resulting in lower implementation costs, for example the metal and polycarbonate connecting roof between the temporary building and the South Pavilion.

(f) **Low impact relocation process.** The relocation being 100 per cent on site, any moving of office furniture and office equipment between buildings would be much easier/faster to execute and control, would be safer and at a much lower cost as no external moving contracts would be required.

(g) **Better control over project timings.** A decision to migrate staff from the North Building to the temporary facility would be triggered almost immediately and as soon as the temporary facility is finished, thus providing for a more controllable and effective project execution as there would be no external dependencies.

35. The key disadvantages of option 1 are the following:

(a) **Intrusiveness.** The temporary building would occupy a parking area normally used by ECLAC staff in the South Building. It is estimated that a total of 20 to 26 parking spaces would be used by the building. Should they be required, ECLAC would use nearby alternate parking facilities for events or congresses, which are normally fully occupied during such events.

(b) **Impact on existing ECLAC operations.** The project would require the involvement of the procurement, facilities management, safety and security, and information technology units, as well as other units for a successful implementation. The cost of resources and time would need to be considered especially during the set-up and tear-down stages of the temporary building.

36. The cost of setting up the temporary building, as provided by the same supplier as was selected for the project implemented in 2010, is estimated at $90,800.

Option 2. Offsite office rental

37. Option 2 would avoid all the design and construction works included in option 1 and aims for a less intrusive or more traditional approach to providing the additional required swing space by renting office space in Santiago near the ECLAC facility.

38. The ECLAC campus is located in a neighbourhood in Santiago with good rental office space available nearby, although rental costs are high because of the demand and a relatively low supply. ECLAC has conducted research on the average cost per m^2 of rental office space within the Vitacura neighbourhood (within a radius of about 2 to 6 km of ECLAC) and with an average market rent of $23.24 per m^2.

39. Using a space occupation density of three persons to every 15 m^2, the total required area of useable office space for 66 staff would be 330 m^2. At the average market rent of $23.24 per m^2 per month, the total cost for 66 staff would amount to $7,669 per month, with a total cost for the project (24 months) of $184,060.

40. Option 2 would also require some capital investment for the set-up of the office space according to United Nations standards, at a cost of $500 per m^2 for a total of $165,000 for 66 staff.

41. The key advantages of option 2 are the following:

(a) **Non-intrusiveness.** Using off-site rental office space would require no intervention and hence no use of internal resources and on-site premises for setting up swing space.

(b) **Impact on existing ECLAC operations.** There would be minimal involvement of existing operating units in ECLAC to set up external rental offices.

42. The key disadvantages for option 2 are the following:

(a) **Higher cost.** Compared to setting up a temporary on-site building for swing space, the cost of renting office space off campus would be about $304,000 higher.

(b) **Higher security risk.** It would be more difficult and costly to maintain the United Nations standards of security and safety in an off-site non-United Nations office building.

(c) **Dependence on external maintenance and support.** Technical aspects of the rental facility such as the electrical system, cleaning, voice/data communications and information technology infrastructure would need to be subcontracted (at least in part) to third parties to guarantee the required United Nations levels of service.

(d) **High impact relocation process.** A moving contractor would be required to pack and move the office furniture and equipment to and from the rental office facilities.

(e) **Less control over project timings.** It would be more difficult to coordinate the availability of consolidated off-site rental space with the building renovation project, which could affect the overall project start and finish dates.

43. On the basis of cost-benefit analysis above, the Secretary-General recommends Option 1. On-site temporary building, for the provision of swing space.

A. Project plan and schedules

44. The overall project plan is divided into the following six phases:

(a) **Preplanning.** Activities for this phase have already begun in 2017 and include the costing, feasibility study, preliminary design and investigation activities.

(b) **Planning.** This phase would be performed during 2018 and includes activities required to recruit a project team and prepare the scope of work and tender documents for the design phase.

(c) **Design.** The objective of the design phase is to achieve a structural design proposal and associated specialty contract specifications that will be part of the full design package used for the construction tender phase.

(d) **Tender.** A one-year tender phase would be required to prepare detailed bidding documents, technical specifications and all design material required to award the construction contract to a selected prime contractor.

(e) **Construction.** Construction phase would involve moving all staff to the temporary swing space, dismantling and demolition works, construction, installation testing, commissioning and handover of the newly renovated facility.

(f) **Close-out.** During close-out staff would gradually move from the temporary swing space to the new building, and contractors would finalize pending punch list items and the defects and liability period would be initiated.

45. The planned schedule for the project is shown in table 3.

Table 3
Project schedule

Phase	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
Preplanning							
Planning							
Design							
Tender							
Construction							
Close-out							

B. Project cost estimates

46. The project costs have been estimated as shown in annex II:

(a) *Trade costs*. An estimated $8.5 million capital investment is required for the design and build phase.

(b) *Consultancy fees*. An estimated $0.6 million would be required to hire a project architect, project engineer and other subject matter expert consultants throughout the various phases of the project.

(c) *Escalation and contingency costs*. Escalation and contingency costs account for about 21 per cent or approximately $3.3 million of the overall project cost, and have been estimated with a 5 per cent compounded rate for escalation and 10 per cent for the contingency provision. Escalation costs take into consideration the construction cost index which is provided by the Chilean Chamber of Construction. The contingency provision has been determined on the basis of best industry practices and experience from other similar projects.

(d) *Project management costs*. A project management team would be needed starting from 2018, consisting of a Project Manager (National Officer) and one

architect (Local level). The Project Manager would be present throughout the entire project and one additional Local level staff member is expected to come on board as the project progresses through the various phases.

(e) *Risk management*. Resources in the amount of $0.2 million would be required for risk management purposes, which accounts for 1.3 per cent of the overall project budget.

(f) *Additional swing space*. Of the 166 staff that would be moved, 100 staff could be accommodated in existing swing space available in various buildings in ECLAC. The remaining 66 staff would need to be accommodated in temporary swing space to be provided in an on-campus temporary building (option 1 for the swing space).

47. The costs were determined using the most up-to-date information available regarding the construction market in Santiago; the estimates are presented in accordance with the standards included in the guidelines for the management of construction projects of the United Nations, issued by the Office of Central Support Services.

C. Cost-benefit and risk assessment

48. The purpose of the cost-benefit and risk assessment analysis is to determine the best overall value proposition for the Organization by looking at the most efficient long-term cost advantage combined with optimizing the safety and environmental operating conditions of the North Building.

49. As shown in section IV.D, "Project strategies", above, there is a clear advantage to the one-time capital renovation strategy over performing multiple interventions, based on the total cost of ownership ($18.185 million versus $31.983 million) and on the added benefits of reduced (zero) energy consumption, lower ongoing maintenance costs, and an extended useful life of the building.

VI. Recommendation

50. On the basis of the cost-benefit analysis, the recommended option is to perform a one-time capital renovation project with an overall investment cost of $14.118 million, which would not only provide ECLAC with a fully renovated, code compliant and safe building for its staff and visitors, but also achieve a net-zero category building in terms of energy generation and consumption, and would include the North Building on a distinguished list of buildings in the region that have achieved such a category.

VII. Project governance

51. A chart depicting the project governance and team structure is provided in annex I.

A. Project owner and oversight

52. The project owner would be the Executive Secretary of ECLAC. The Executive Secretary has designated the Director of the Division of Administration as Project Executive, who would be responsible for managing the dedicated project management team, interacting with internal and external stakeholders, and reporting

on strategic issues requiring senior-level decision-making. The day-to-day project execution would be under the leadership of the dedicated Project Manager. The proposed project governance and management structures set out in annex I are based on the generic structure contained in the guidelines for the management of construction projects issued by the Office of Central Support Services in January 2016, which was modified for this specific project. The salient features of the governance structure are:

(a) Well-defined coordination and support on the various aspects of the project between the Office of Central Support Services at Headquarters and ECLAC to facilitate the sharing of knowledge and provide alerts and early remedial action in case issues arise;

(b) Early establishment of the dedicated project management team and support functions with clear reporting lines;

(c) The establishment of a stakeholders committee to assist the Executive Secretary at ECLAC and the Director of Administration to proactively manage the project;

(d) The inclusion of an independent risk management framework early in the project development process.

53. The stakeholders committee would be led by the Executive Secretary, or her designee, and would provide her with advice and guidance with respect to the operational aspects of the project. The committee would not be able to make changes that would affect the scope, schedule or cost of the project. The committee would draw its members from ECLAC, other secretariat offices based within the Commission's premises in Santiago and external entities.

54. ECLAC members of the stakeholders committee would include the General Services Section, the Publications and Web Services Division, the Sustainable Development and Human Settlements Division, the Latin American and Caribbean Demographic Centre — Population Division, the Natural Resources and Infrastructure Division, the Information and Communications Technologies Section, the Office of the Deputy Executive Secretary for Management and Programme Analysis and the Security and Safety Section. Membership from other secretariat offices includes the Office of Information and Communications Technology, the Department of Safety and Security and the Office of Central Support Services at United Nations Headquarters in New York. Advice and input from other stakeholders such as the United Nations country team would also be sought, if required. In addition, external stakeholders, such as the Ministry of Foreign Affairs of Chile and Vitacura County would be updated as required on the project. The stakeholders committee would be informed on the details of the project at key milestones with regard to its scope, schedule and cost.

55. The Secretary-General is also mindful of the recommendation of the Advisory Committee on Administrative and Budgetary Questions (A/70/7/Add.3, para. 21), that the establishment of an advisory board for the project should be considered. While that recommendation is still under consideration, the Secretary-General wishes to draw a distinction between the present proposed project, the programme requirements of which are relatively straightforward (as it entails the renovation of an existing office building), and larger projects for which advisory boards have been established that are more complex in scope and comprise multiple-use spaces (conference rooms, technical rooms, commercial areas and office space). The Secretary-General is currently disinclined to establish an advisory board for this project, but stands ready to receive additional guidance from the General Assembly on the matter.

B. Role of the Office of Central Support Services

56. The Office of Central Support Services, as indicated in Secretary-General's bulletin ST/SGB/2013/1, provides support and coordination to offices away from Headquarters and regional commissions in the management of their properties and construction projects. In line with General Assembly resolution 70/248, section XII, paragraph 11, the role of the Office on the project has been established and is included in the overall governance structure (see annex I).

57. The Office provides overall project oversight, provides ECLAC with technical guidance and advice on the project, ensures that the project will comply with overall organizational objectives, for example those set out in the strategic capital review, share lessons learned from other capital projects undertaken by the Organization and coordinate with New York-based project stakeholders, across Secretariat departments and governing bodies.

58. In addition, and in consideration of the guidance received from the General Assembly in its resolution 70/248, section IX, paragraph 13, on the renovation of the Africa Hall at the Economic Commission for Africa (ECA), and the recommendation of the Advisory Committee on Administrative and Budgetary Questions in its report on the seismic mitigation project at the premises of the Economic and Social Commission for Asia and the Pacific (ESCAP) (A/70/7/Add.3, paras. 22 and 27), the Office of Central Support Services would take a lead role in providing independent risk management services for both projects. To that effect, the Office is in the process of procuring the services of a specialist risk-management firm to assist in providing the Organization with expert services, including a quantitative risk assessment, to perform services on two ongoing projects at ECA and ESCAP. Should the General Assembly approve the project proposal for the renovation of the North Building at ECLAC, the contract for the firm would be extended to include the project. Such services would be managed centrally by the Office in New York, and funded as a part of the project cost plan (see annex II).

59. As indicated in the lessons learned from the other capital projects of the Secretariat (A/69/760), having a dedicated project management team of an adequate size, starting early in the planning stage of the project and working continuously through to project completion are essential components to ensure the success of a capital project of such size. The proposed dedicated project team would be composed of a Project Manager, project team staff, project support staff, independent and integrated risk management service providers and external specialized consultants. Under both options 1 and 2, the dedicated project team working on site would have the same member composition in number and functions, but for a different duration, in accordance with the project implementation timeline.

C. Dedicated project management team and project support

60. *ECLAC project team*. The team would be led by the Project Manager (National Officer). The level of National Officer is proposed for the Project Manager in order not only to include local expertise in building construction and related codes and standards but also to accurately reflect the required level of expertise and responsibility of the Project Manager, as well as the appropriate reporting lines within the corporate governance structure. Under the leadership of the Project Manager, the project team would be composed of one architect (Local level) for the initial part of the project when design and major structural work are carried out.

61. *ECLAC project support*. The project support would be provided by one Administrative Assistant (Local level) for the entire duration of the project.

62. *Consultancy services*. External to the United Nations, but within the dedicated project management team, the services of consultants, contractors and suppliers would be required. Given the specialized nature of the project, external consultancies for the provision of architectural, engineering and construction management would be needed to produce the detailed design and technical documentation for tender and oversight of the construction works. These services would be managed and coordinated by the lead architectural and engineering firm. Required specialized services would also include architectural and interior consultancy services for office space design and space planning related to the implementation of flexible workplace strategies and the change management components of the project. Whereas the role of the dedicated project management team would be to coordinate and oversee the works on behalf of the United Nations, the external consultants would among others be responsible for producing the actual detailed design and construction documents for procurement of construction and fitting-out services, providing technical and contract administration and oversight during the actual construction and fitting-out works, specifically related to flexible workspace construction, producing and coordinating office space design and programming, producing floor layouts and any materials and documentation required for communication, staff outreach and engagement.

D. Independent risk management

63. In order to implement a robust integrated approach to risk management in line with industry best practices, it is proposed that an independent risk-management firm be included as part of this project as similar services were incorporated in the governance of other substantial capital projects undertaken by the United Nations. The risk-management framework would include development and use of a risk register, and a risk-based approach to the establishment and management of the contingency provision.

64. The independent risk-management firm would report directly to the Office of Central Support Services in New York to provide an independent assessment of the course of the various project actions, provide expertise to the project, assist in identifying and mitigating any risks that may affect the successful delivery of the project and support informed decision-making.

65. The dedicated project management team, including its consultants, would be responsible for integrating risk management as part of the regular/ongoing project management process.

E. Host country arrangements

66. The host country has provided for significant support arrangements for United Nations operations in Chile and specifically for the ECLAC compound. The Economic Commission for Latin America was established by the Economic and Social Council in its resolution 106 (VI) of 25 February 1948 and began to function that same year. The scope of the Commission's work was later broadened to include the countries of the Caribbean and, by resolution 1984/67 of 27 July 1984, the Council decided to change its name to the Economic Commission for Latin America and the Caribbean.

67. The ECLAC headquarters building was constructed in 1965 on a 5-ha lot donated by the Government of Chile in 1960. The compound continued to grow, and in 1997 the Government of Chile donated two additional plots, increasing the total area to 5.9 ha. A host country agreement was signed in February 1948, providing for

privileges and immunities including duty exemption for contracts and material importations for entitled staff and for official purposes such as construction materials, equipment and infrastructure. These benefits would be extended to any construction project, leading to reduced overall cost, and expedited importation arrangements through the established host country liaison arrangements.

VIII. Next steps

68. Should the General Assembly authorize the Secretary-General to commence the project in 2018, the immediate next steps would be as follows:

(a) Complete the analysis of the existing conditions of space utilization late in 2017;

(b) Recruit the dedicated project management team (one National Officer and two Local level staff) in 2018;

(c) Tender for architectural consultancy services for the renovation of the North Building, interior space planning/design, and change management services;

(d) Complete the detailed swing space strategy; prepare design and tender actions for the construction of swing space;

(e) Establish a stakeholders' committee, change management and corporate support group and other administrative agreements;

(f) Engage the independent risk-management firm (managed by the Office of Central Support Services in New York) to commence risk management services;

(g) Coordinate with the host country about host country arrangements.

IX. Project costs and resource requirements for the biennium 2018-2019

69. The resource requirements for 2018 are summarized in table 4.

Table 4
Resource requirements for 2018
(Thousands of United States dollars)

Budget section and cost components	*2018*
Section 21, Economic development in Latin America and the Caribbean	
Project management	112.0
Subtotal, section 21	**112.0**
Section 33, Construction, alteration, improvement and major maintenance	
Risk management	80.0
Subtotal, section 33	**80.0**
Total of all budget sections	**192.0**

X. Action to be taken by the General Assembly

70. **The General Assembly is recommended:**

(a) **To approve the proposed scope, cost and implementation strategy for the implementation of the project;**

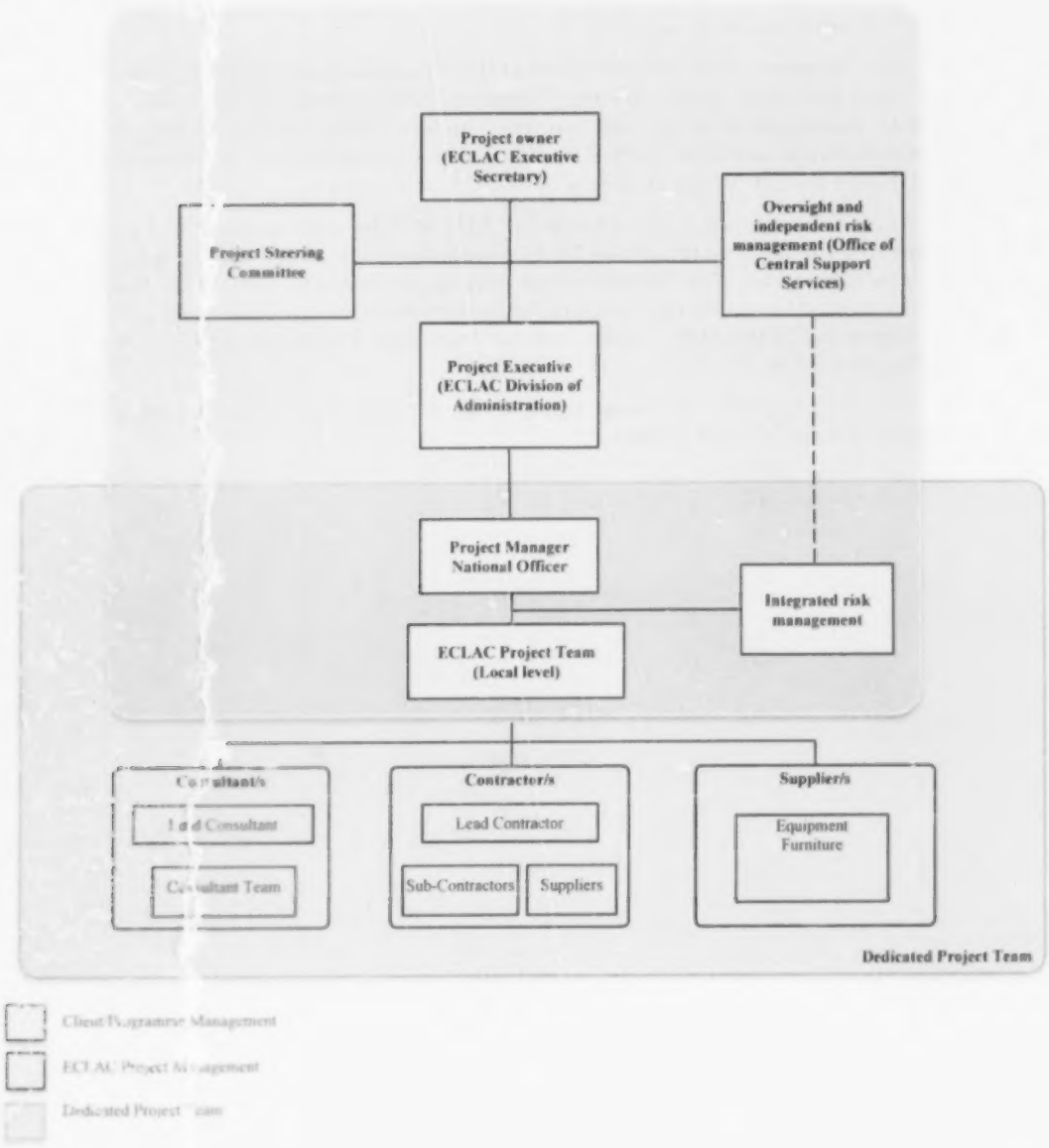
(b) **To approve the establishment of three positions (one National Officer and two Local level staff) effective 1 January 2018, related to the dedicated project management team and project support staff, under section 21, Economic development in Latin America and the Caribbean, of the proposed programme budget for the biennium 2018-2019;**

(c) **To appropriate an amount of $192,000 for the project in 2018, comprising $112,000 under section 21, Economic development in Latin America and the Caribbean, and $80,000 under section 33, Construction, alteration, improvement and major maintenance, of the proposed programme budget for the biennium 2018-2019, which would represent a charge against the contingency fund;**

(d) **To approve the establishment of a multi-year construction-in-progress account for this project.**

Annex I

Proposed project governance structure



Annex II

Detailed cost plan

(Millions of United States dollars)

Cost estimates	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*	*Total*
1. Trade costs				4.266	4.266		8.532
2. Consultancy fees (architect, engineer)		0.250	0.050	0.100	0.100	0.050	0.550
Subtotal	–	**0.250**	**0.050**	**4.366**	**4.366**	**0.050**	**9.082**
3. Escalation costs		0.026	0.008	0.938	1.202	0.017	2.190
4. Contingency costs		0.027	0.006	0.529	0.555	0.007	1.124
5. Project management costs	0.112	0.225	0.290	0.290	0.290	0.225	1.431
6. Risk management costs	0.080	0.030	0.030	0.030	0.030		0.200
7. Additional swing space costs				0.045	0.045		0.091
Subtotal	**0.192**	**0.308**	**0.333**	**1.832**	**2.122**	**0.248**	**5.036**
Total	**0.192**	**0.558**	**0.383**	**6.198**	**6.488**	**0.298**	**14.118**